

FORM PTO-1449

ATTY. DOCKET NO.
1875.1730001APPLICATION NO.
10/730,093THIRD SUPPLEMENTAL
INFORMATION DISCLOSURE STATEMENTFIRST NAMED INVENTOR
Sam Z. ZhaoFILING DATE
December 9, 2003ART UNIT
2829

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>DF</i>	AA1	5,744,863	04/1998	Culnane <i>et al.</i>			
	AB1	5,976,912	11/1999	Fukutomi <i>et al.</i>			
	AC1	6,040,984	03/2000	Hirakawa			
	AD1	6,614,660 B1	09/2003	Bal <i>et al.</i>			
	AE1	6,657,870 B1	12/2003	Ali <i>et al.</i>			
	AF1	6,724,071 B2	04/2004	Combs			
	AG1	6,724,080 B1	04/2004	Ooi <i>et al.</i>			
	AH1	2001/0040279 A1	11/2001	Mess <i>et al.</i>			
<i>DF</i>	AI1	2004/0072456 A1	04/2004	Dozier, II <i>et al.</i>			
	AJ1						
	AK1						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL1						Yes No
	AM1						Yes No
	AN1						Yes No
	AO1						Yes No
	AP1						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

<i>DF</i>	AR	1	Amkor package data sheet, "SuperFC [®] ", from http://www.amkor.com/Products/all_datasheets/superfc.pdf , 2 pages (Jan. 2003).				
<i>DF</i>	AS	1	Andros, F., "Tape Ball Grid Array," from Puttlitz, K.J. and Totta, P.A. (eds.), <i>Area Array Interconnection Handbook</i> , pp. 619-620, ISBN No. 0-7923-7919-5, Kluwer Academic Publishers (2001).				
<i>DF</i>	AT	1	Brofman, P.J. <i>et al.</i> , "Flip-Chip Die Attach Technology," Puttlitz, K.J. and Totta, P.A. (eds.), <i>Area Array Interconnection Handbook</i> , pp. 315-349, ISBN No. 0-7923-7919-5, Kluwer Academic Publishers (2001).				

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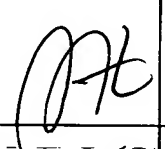
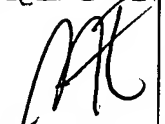
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA2						
	AB2						
	AC2						
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	AE2						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL2						Yes No
	AM2						Yes No
	AN2						Yes No
	AO2						Yes No
	AP2						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	2	Ghosal, B. et al., "Ceramic and Plastic Pin Grid Array Technology," Puttlitz, K.J. and Totta, P.A. (eds.), <i>Area Array Interconnection Handbook</i> , pp. 551-576, ISBN No. 0-7923-7919-5, Kluwer Academic Publishers (2001).
	AS	2	Harper, C.A. (ed.), <i>Electronic Packaging And Interconnection Handbook</i> , Third Edition, pp. 7.58-7.59, ISBN No. 0-07-134745-3, McGraw-Hill Companies (2000).
	AT	2	Lin, S. and Chang, N., "Challenges in Power-Ground Integrity," <i>Proceedings Of The 2001 International Conference On Computer-Aided Design</i> , pp. 651-654 (November 4-8, 2001).

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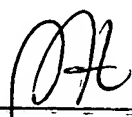

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	AA3						
	AB3						
	AC3						
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	AJ3						
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	AL3						Yes No
	AM3						Yes No
	AN3						Yes No
	AO3						Yes No
	AP3						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AR	3	Lloyd, J. and Overhauser, D., "Electromigration wreaks havoc on IC design," <i>EDN</i> , pp. 145-148 (March 26, 1998).
	AS	3	Song, W.S. and Glasser, L.A., "Power Distribution Techniques for VLSI Circuits," <i>IEEE Journal Of Solid-State Circuits</i> , Vol. SC-21, No. 1, pp. 150-156 (February 1986).
	AT	3	Tang, K.T. and Friedman, E.G., "Simultaneous Switching Noise in On-Chip CMOS Power Distribution Networks," <i>IEEE Transactions On Very Large Scale Integration (VLSI) Systems</i> , Vol. 10, No. 4, pp. 487-493 (August 2002).

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
OA	AA1	2001/0001505 A1	05/2001	Schueller <i>et al.</i>			
	AB1	2001/0045644 A1	11/2001	Huang			
	AC1	2002/0053731 A1	05/2002	Chao <i>et al.</i>			
	AD1	2002/0072214 A1	06/2002	Yuzawa <i>et al.</i>			
	AE1	2002/0079562 A1	06/2002	Zhao <i>et al.</i>			
	AF1	2002/0096767 A1	07/2002	Cote <i>et al.</i>			
	AG1	2002/0098617 A1	07/2002	Lee <i>et al.</i>			
	AH1	2002/0109226 A1	08/2002	Khan <i>et al.</i>			
OA	AI1	2002/0135065 A1	09/2002	Zhao <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
OA	AJ1	0 504 411 B1	06/1998	EP	H01L	23/04	N/A
	AK1	61-49446 A	03/1986	JP	H01L	23/36	No
	AL1	7-283336 A	10/1995	JP	H01L	23/12	No
OA	AM1	10-50877 A	02/1998	JP	H01L	23/12	No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

OA	AN	1	Ahn, S.H. and Kwon, Y.S., "Popcorn Phenomena in a Ball Grid Array Package", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology Part B: Advanced Packaging</i> , IEEE, August 1995, Vol. 18, No. 3, pp. 491-495.
	AO	1	Amkor Electronics, "Amkor BGA Packaging: Taking The World By Storm", <i>Electronic Packaging & Production</i> , Cahners Publishing Company, May 1994, page unknown.
	AP	1	Anderson, L. and Trabucco, B., "Solder Attachment Analysis of Plastic BGA Modules", <i>Surface Mount International Conference</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 189-194.
	AQ	1	Andrews, M., "Trends in Ball Grid Array Technology," <i>Ball Grid Array National Symposium</i> , March 29-30, 1995, Dallas, Texas, 10 pages.
OA	AR	1	Attarwala, A.I. Dr. and Stierman, R., "Failure Mode Analysis of a 540 Pin Plastic Ball Grid Array", <i>Surface Mount International Conference</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 252-257.

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OH	AA2	2002/0171144 A1	11/2002	Zhang <i>et al.</i>			
	AB2	2002/0180040 A1	12/2002	Camenforte <i>et al.</i>			
	AC2	2002/0185717 A1	12/2002	Eghan <i>et al.</i>			
	AD2	2003/0111726 A1	06/2003	Khan <i>et al.</i>			
	AE2	2003/0138613 A1	07/2003	Thoman <i>et al.</i>			
	AF2	3,790,866	02/1974	Meyer <i>et al.</i>			
	AG2	4,611,238	09/1986	Lewis <i>et al.</i>			
	AH2	5,045,921	09/1991	Lin <i>et al.</i>			
OH	AI2	5,065,281	11/1991	Hernandez <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
OH	AJ2	10-189835 A	07/1998	JP	H01L	23/24	No
	AK2	10-247702 A	09/1998	JP	H01L	23/12	Yes (Doc. AR4)
	AL2	10-247703 A	09/1998	JP	H01L	23/12	No
OH	AM2	11-17064 A	01/1999	JP	H01L	23/14	No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	2	Banerji, K., "Development of the Slightly Larger Than IC Carrier (SLICC)", <i>Journal of Surface Mount Technology</i> , July 1994, pp. 21-26.
	AO	2	Bauer, C., Ph.D., "Partitioning and Die Selection Strategies for Cost Effective MCM Designs", <i>Journal of Surface Mount Technology</i> , October 1994, pp. 4-9.
	AP	2	Bernier, W.E. <i>et al.</i> , "BGA vs. QFP: A Summary of Tradeoffs for Selection of High I/O Components", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 181-185.
	AQ	2	Burgos, J. <i>et al.</i> , "Achieving Accurate Thermal Characterization Using a CFD Code-- A Case Study of Plastic Packages", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A</i> , IEEE, December 1995, Vol. 18, No. 4, pp. 732-738.
OH	AR	2	Chadima, M., "Interconnecting Structure Manufacturing Technology," <i>Ball Grid Array National Symposium</i> , Dallas, Texas, March 29-30, 1995, 12 pages.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>OT</i>	AA3	5,173,766	12/1992	Long <i>et al.</i>			
	AB3	5,208,504	05/1993	Parker <i>et al.</i>			
	AC3	5,216,278	06/1993	Lin <i>et al.</i>			
	AD3	5,285,352	02/1994	Pastore <i>et al.</i>			
	AE3	5,291,062	03/1994	Higgins, III			
	AF3	5,294,826	03/1994	Marcantonio <i>et al.</i>			
	AG3	5,366,589	11/1994	Chang			
	AH3	5,394,009	02/1995	Loo			
<i>OT</i>	AI3	5,397,917	03/1995	Ommen <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
<i>OT</i>	AJ3	11-102989 A	04/1999	JP	H01L	23/12	Yes (Doc. AP5)
	AK3	2000-286294 A	10/2000	JP	H01L	21/60	No
	AL3	2001-68512 A	03/2001	JP	H01L	21/60	No
	✓ AM3	0 573 297 A2	12/1993	EP	H01L	23/498	N/A

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	3	Chanchani, R. <i>et al.</i> , "Mini BGA: Pad and Pitch Ease Die Test and Handling", <i>Advanced Packaging</i> , IHS Publishing Group, May/June 1995, pp. 34 and 36-37.
	AO	3	Chung, T.C. <i>et al.</i> , "Rework of Plastic, Ceramic, and Tape Ball Grid Array Assemblies", <i>Ball Grid Array National Symposium Proceedings</i> , Dallas, Texas, March 29-30, 1995, pp. 1-15.
	AP	3	Cole, M.S. and Caulfield, T. "A Review of Available Ball Grid Array (BGA) Packages", <i>Journal of Surface Mount Technology</i> , Surface Mount Technology Association, January 1996, Vol. 9, pp. 4-11.
	AQ	3	Cole, M.S. and Caulfield, T., "Ball Grid Array Packaging", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 147-153.
<i>OT</i>	AR	3	Dobers, M. and Seyffert, M., "Low Cost MCMs: BGAs Provide a Fine-Pitch Alternative", <i>Advanced Packaging</i> , IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 28, 30 and 32.

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<i>AL</i>	AA4	5,397,921	03/1995	Kamezos			
	AB4	5,409,865	04/1995	Kamezos			
	AC4	5,433,631	07/1995	Beaman <i>et al.</i>			
	AD4	5,438,216	08/1995	Juskey <i>et al.</i>			
	AE4	5,474,957	12/1995	Urushima			
	AF4	5,490,324	02/1996	Newman			
	AG4	5,534,467	07/1996	Rostoker			
	AH4	5,541,450	07/1996	Jones <i>et al.</i>			
<i>AL</i>	AI4	5,552,635	09/1996	Kim <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
<i>AL</i> ✓	AJ4	2 803 098 A3	06/2001	FR	H01L	23/367	No
✓	AK4	383908	03/2000	TW	H01L	23/34	No
	AL4	417219 ✓	01/2001	TW	H01L	21/60	No
	AM4						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	4	Dody, G. and Bumette, T., "BGA Assembly Process and Rework", <i>Journal of Surface Mount Technology</i> , Surface Mount Technology Association, January 1996, Vol. 9, pp. 39-45.
	AO	4	Edwards, D. <i>et al.</i> , "The Effect of Internal Package Delaminations on the Thermal Performance of PQFP, Thermally Enhanced PQFP, LOC and BGA Packages", <i>45th Electronic Components & Technology Conference</i> , IEEE, May 21-24, 1995, Las Vegas, NV, pp. 285-292.
	AP	4	Ejim, T.L. <i>et al.</i> , "Designed Experiment to Determine Attachment Reliability Drivers for PBGA Packages", <i>Journal of Surface Mount Technology</i> , Surface Mount Technology Association, January 1996, Vol. 9, pp. 30-38.
	AQ	4	English-language Abstract of JP 10-189835, published July 21, 1998, 1 page, printed from http://v3.espacenet.com .
<i>AL</i>	AR	4	English-language translation of JP 10-247702, published September 14, 1998, 8 pages.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>DA</i>	AA5	5,572,405	11/1996	Wilson <i>et al.</i>			
	AB5	5,578,869	11/1996	Hoffman <i>et al.</i>			
	AC5	5,583,377	12/1996	Higgins, III			
	AD5	5,583,378	12/1996	Marrs <i>et al.</i>			
	AE5	5,642,261	06/1997	Bond <i>et al.</i>			
	AF5	5,648,679	07/1997	Chillara <i>et al.</i>			
	AG5	5,650,659	07/1997	Mostafazadeh <i>et al.</i>			
	AH5	5,650,662	07/1997	Edwards <i>et al.</i>			
<i>DA</i>	AI5	5,691,567	11/1997	Lo <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
<i>DA</i>	AJ5						Yes No
	AK5						Yes No
	AL5						Yes No
	AM5						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>5</u>	English-language Abstract of JP 10-247703, published September 14, 1998, 1 page, printed from http://v3.espacenet.com .				
	AO	<u>5</u>	English-language Abstract of JP 10-050877, published February 20, 1998, 1 page, printed from http://v3.espacenet.com .				
	AP	<u>5</u>	English-language Translation of JP 11-102989, published April 14, 1999, 24 pages.				
	AQ	<u>5</u>	English-language Abstract of JP 11-017064, published January 22, 1999, 1 page, printed from http://v3.espacenet.com .				
<i>DA</i>	AR	<u>5</u>	English-language Abstract of JP 2000-286294, published October 13, 2000, 1 page, printed from http://v3.espacenet.com .				

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2826-7

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>ATC</i>	AA6	5,717,252	02/1998	Nakashima <i>et al.</i>			
	AB6	5,738,785	04/1998	Chiang <i>et al.</i>			
	AC6	5,796,170	08/1998	Marcantonio			
	AD6	5,798,909	08/1998	Bhatt <i>et al.</i>			
	AE6	5,801,432	09/1998	Rostoker <i>et al.</i>			
	AF6	5,835,355	11/1998	Dordi			
	AG6	5,843,808	12/1998	Karnazos			
	AH6	5,844,168	12/1998	Schueller <i>et al.</i>			
<i>ATC</i>	AI6	5,856,911	01/1999	Riley			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
<i>ATC</i>	AJ6						Yes No
	AK6						Yes No
	AL6						Yes No
	AM6						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	6	English-language Abstract of JP 2001-068512, published March 16, 2001, 1 page, printed from http://v3.espacenet.com .
	AO	6	English-language Abstract of JP 61-049446, published March 11, 1986, 1 page, printed from http://v3.espacenet.com .
	AP	6	English-language Abstract of JP 7-283336, published October 27, 1995, 1 page, printed from http://v3.espacenet.com .
	AQ	6	Ewanich, J. <i>et al.</i> , "Development of a Tab (TCP) Ball Grid Array Package", <i>Proceedings of the 1995 International Electronics Packaging Conference</i> , San Diego, CA, September 24-27, 1995, pp. 588-594.
<i>ATC</i>	AR	6	Fausser, S. <i>et al.</i> , "High Pin-Count PBGA Assembly", <i>Circuits Assembly</i> , February 1995, Vol. 6, No. 2, pp. 36-38 and 40.

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12/11/04

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<i>DFC</i>	AA7	5,866,949	02/1999	Schueller			
	AB7	5,883,430	03/1999	Johnson			
	AC7	5,889,321	03/1999	Culnane <i>et al.</i>			
	AD7	5,889,324	03/1999	Suzuki			
	AE7	5,894,410	04/1999	Barrow			
	AF7	5,895,967	04/1999	Steams <i>et al.</i>			
	AG7	5,901,041	05/1999	Davies <i>et al.</i>			
	AH7	5,903,052	05/1999	Chen <i>et al.</i>			
	AI7	5,905,633	05/1999	Shim <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

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	AJ7						Yes No
	AK7						Yes No
	AL7						Yes No
	AM7						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<i>I</i>	Fausser, Suzanne <i>et al.</i> , "High Pin Count PBGA Assembly: Solder Defect Failure Modes and Root Cause Analysis", <i>Surface Mount International, Proceedings of The Technical Program</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 169-174.
	AO	<i>I</i>	Ferguson, M. "Ensuring High-Yield BGA Assembly", <i>Circuits Assembly</i> , February 1995, Vol. 6, No. 2, pp. 54, 56 and 58.
	AP	<i>I</i>	Freda, M., "Laminate Technology for IC Packaging", <i>Electronic Packaging & Production</i> , Cahners Publishing Company, October 1995, Vol. 35, No. 11, pp. S4-S5.
<i>DF</i>	AQ	<i>I</i>	Freedman, M., "Package Size and Pin-Out Standardization", <i>Ball Grid Array National Symposium</i> , March 29-30, 1995, 6 pages.
<i>DF</i>	AR	<i>I</i>	Freyman, B. and Pennisi, R., "Overmolded Plastic Pad Array Carriers (OMPAC): A Low Cost, High Interconnect Density IC Packaging Solution for Consumer and Industrial Electronics", <i>41st Electronic Components & Technology Conference</i> , IEEE, May 11-16, 1991, pp. 176-182.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>07</i>	AA8	5,907,189	05/1999	Mertol			
	AB8	5,907,903	06/1999	Ameen <i>et al.</i>			
	AC8	5,920,117	07/1999	Sono <i>et al.</i>			
	AD8	5,949,137	09/1999	Domadia <i>et al.</i>			
	AE8	5,953,589	09/1999	Shim <i>et al.</i>			
	AF8	5,972,734	10/1999	Carichner <i>et al.</i>			
	AG8	5,977,626	11/1999	Wang <i>et al.</i>			
	AH8	5,977,633	11/1999	Suzuki <i>et al.</i>			
	AI8	5,982,621	11/1999	Li			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ8						Yes No
	AK8						Yes No
	AL8						Yes No
	AM8						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	8	Freyman, B. <i>et al.</i> , "Surface Mount Process Technology for Ball Grid Array Packaging", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 29-September 2, 1993, San Jose, California, pp. 81-85.
	AO	8	Freyman, B. <i>et al.</i> , "The Move to Perimeter Plastic BGAs", <i>Surface Mount International Conference Proceedings</i> , San Jose, CA, August 29-31, 1995, pp. 373-382.
	AP	8	Freyman, B., "Trends in Plastic BGA Packaging," <i>Ball Grid Array National Symposium</i> , Dallas, Texas, March 29-30, 1995, 44 pages.
	AQ	8	Gilleo, K., "Electronic Polymers: Die Attach and Oriented Z-Axis Films", <i>Advanced Packaging</i> , IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 37-38, 40 and 42.
	AR	8	Guenin, B. <i>et al.</i> , "Analysis of a Thermally Enhanced Ball Grid Array Package", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology, Part A</i> , IEEE Components, Packaging, and Manufacturing Technology Society, December 1995, Vol. 18, No. 4, pp. 749-757.

EXAMINER

DATE CONSIDERED

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>ma</i>	AA9	5,986,340	11/1999	Mostafazadeh <i>et al.</i>			
	AB9	5,986,885	11/1999	Wyland			
	AC9	5,998,241	12/1999	Niwa			
	AD9	5,999,415	12/1999	Hamzehdoost			
	AE9	6,002,147	12/1999	Iovdalsky <i>et al.</i>			
	AF9	6,002,169	12/1999	Chia <i>et al.</i>			
	AG9	6,011,304	01/2000	Mertol			
	AH9	6,011,694	01/2000	Hirakawa			
	AI9	6,020,637	02/2000	Karnezos			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ9						Yes No
	AK9						Yes No
	AL9						Yes No
	AM9						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	9	Hart, C. "Vias in Pads", <i>Circuits Assembly</i> , February 1995, Vol. 6, No. 2, pp. 42, 44-46 and 50.
	AO	9	Hart, C., "Vias in Pads for Coarse and Fine Pitch Ball Grid Arrays", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 203-207.
	AP	9	Hattas, D., "BGAs Face Production Testing: New Package Offers Promise but Must Clear Technology Hurdles.", <i>Advanced Packaging</i> , IHS Publishing Group, Summer 1993, Vol. 2, No. 3, pp. 44-46.
<i>▽</i>	AQ	9	Hayden, T.F. <i>et al.</i> , "Thermal & Electrical Performance and Reliability Results for Cavity-Up Enhanced BGAs", <i>Electronic Components and Technology Conference</i> , IEEE, 1999, pp. 638-644.
<i>ma</i>	AR	9	Heitmann, R., "A Direct Attach Evolution: TAB, COB and Flip Chip Assembly Challenges", <i>Advanced Packaging</i> , IHS Publishing Group, July/August 1994, Vol. 3, No. 4, pp. 95-99.

EXAMINER

DATE CONSIDERED

12/11/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>OK</i>	AA10	6,028,358	02/2000	Suzuki			
	AB10	6,034,427	03/2000	Lan <i>et al.</i>			
	AC10	6,057,601	05/2000	Lau <i>et al.</i>			
	AD10	6,060,777	05/2000	Jamieson <i>et al.</i>			
	AE10	6,069,407	05/2000	Hamzehdoost			
	AF10	6,077,724	06/2000	Chen			
	AG10	6,084,297	07/2000	Brooks <i>et al.</i>			
	AH10	6,084,777	07/2000	Kalidas <i>et al.</i>			
	AI10	6,114,761	09/2000	Mertol <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ10						Yes No
	AK10						Yes No
	AL10						Yes No
	AM10						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>10</u>	Hodson, T., "Study Examines BGA Use", <i>Electronic Packaging & Production</i> , March 1993, page unknown.
	AO	<u>10</u>	Holden, H., "The Many Techniques of Small Via Formation for Thin Boards", <i>The Institute for Interconnecting and Packaging Electronic Circuits Ball Grid Array National Symposium</i> , San Diego, CA, January 18-19, 1996, pp. 1-7.
	AP	<u>10</u>	Houghten, J., "New Package Takes On QFPs", <i>Advanced Packaging</i> , IHS Publishing Group, Winter 1993, Vol. 2, No. 1, pp. 38-39.
	AQ	<u>10</u>	Houghten, J.L., "Plastic Ball-Grid Arrays Continue To Evolve", <i>Electronic Design</i> , February 6, 1995, pp. 141-146.
	AR	<u>10</u>	"How To Give Your BGAs A Better Bottom Line.", <i>Advanced Packaging</i> , IHS Publishing Group, May/June 1995, page unknown.

EXAMINER

DATE CONSIDERED

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>JA</i>	AA11	6,117,797	09/2000	Hembree			
	AB11	6,122,171	09/2000	Akram <i>et al.</i>			
	AC11	6,133,064	10/2000	Nagarajan <i>et al.</i>			
	AD11	6,140,707	10/2000	Plepys <i>et al.</i>			
	AE11	6,160,705	12/2000	Stearns <i>et al.</i>			
	AF11	6,162,659	12/2000	Wu			
	AG11	6,163,458	12/2000	Li			
	AH11	6,166,434	12/2000	Desai <i>et al.</i>			
	AI11	6,184,580 B1	02/2001	Lin			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ11						Yes No
	AK11						Yes No
	AL11						Yes No
	AM11						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	11	Huang, W. and Ricks, J., "Electrical Characterization of PBGA for Communication Applications by Simulation and Measurement", <i>National Electronic Packaging and Production Conference West '95</i> , February 26-March 2, 1995, Anaheim, California, pp. 300-307.
	AO	11	Hundt, M. <i>et al.</i> , "Thermal Enhancements of Ball Grid Arrays", <i>National Electronic Packaging and Production Conference West '95</i> , Reed Exhibition Companies, Anaheim, CA, February 25-29, 1996, pp. 702-711.
	AP	11	Hutchins, C.L., "Understanding Grid Array Packages", <i>Surface Mount Technology Magazine</i> , IHS Publishing Group, November 1994, Vol. 8, No. 11, pp. 12-13.
<i>JA</i>	AQ	11	Hwang, J.S., "A Hybrid of QFP and BGA Architectures", <i>Surface Mount Technology Magazine</i> , IHS Publishing Group, February 1995, Vol. 9, No. 2, p. 18.
<i>JA</i>	AR	11	Hwang, J.S., "Reliability of BGA Solder Interconnections", <i>Surface Mount Technology Magazine</i> , IHS Publishing Group, September 1994, Vol. 8, No. 9, pp. 14-15.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
DA	AA12	6,201,300 B1	03/2001	Tseng <i>et al.</i>			
	AB12	6,207,467 B1	03/2001	Vaiyapuri <i>et al.</i>			
	AC12	6,212,070 B1	04/2001	Atwood <i>et al.</i>			
	AD12	6,242,279 B1	06/2001	Ho <i>et al.</i>			
	AE12	6,246,111 B1	06/2001	Huang <i>et al.</i>			
	AF12	6,278,613 B1	08/2001	Fernandez <i>et al.</i>			
	AG12	6,288,444 B1	09/2001	Abe <i>et al.</i>			
	AH12	6,313,521 B1	11/2001	Baba			
	AI12	6,313,525 B1	11/2001	Sasano			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ12						Yes No
	AK12						Yes No
	AL12						Yes No
	AM12						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	12	Johnson, R. <i>et al.</i> , "A Feasibility Study of of Ball Grid Array Packaging", <i>National Electronic Packaging and Production Conference East '93</i> , Boston, Massachusetts, June 14-17, 1993, pp. 413-422.
	AO	12	Johnson, R. <i>et al.</i> , "Thermal Characterization of 140 and 225 Pin Ball Grid Array Packages", <i>National Electronic Packaging & Production Conference East '93</i> , Boston, Massachusetts, June 14-17, 1993, pp. 423-430.
	AP	12	Johnston, P., "Printed Circuit Board Design Guidelines for Ball Grid Array Packages", <i>Journal of Surface Mount Technology</i> , Surface Mount Technology Association, January 1996, Vol. 9, pp. 12-18.
	AQ	12	Johnston, P., "Land Pattern Interconnectivity Schemes", <i>Ball Grid Array National Symposium</i> , Dallas, Texas, March 29-30, 1995, pages 2-21.
	AR	12	Kamezos, M., "An EPBGA Alternative," <i>Advanced Packaging</i> , June 1998, pages 90, 92, 94, and 96.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>DF</i>	AA13	6,347,037 B2	02/2002	Iijima <i>et al.</i>			
	AB13	6,362,525 B1	03/2002	Rahim			
	AC13	6,369,455 B1	04/2002	Ho <i>et al.</i>			
	AD13	6,380,623 B1	04/2002	Demore			
	AE13	6,462,274 B1	10/2002	Shim <i>et al.</i>			
	AF13	6,472,741 B1	10/2002	Chen <i>et al.</i>			
	AG13	6,525,942 B2	02/2003	Huang <i>et al.</i>			
	AH13	6,528,869 B1	03/3003	Glenn <i>et al.</i>			
	AI13	6,528,892 B2	03/3003	Caletka <i>et al.</i>			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ13						Yes No
	AK13						Yes No
	AL13						Yes No
	AM13						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	13	Kawahara, T. <i>et al.</i> , "Ball Grid Array Type Package By Using of New Encapsulation Method", <i>Proceedings of the 1995 International Electronics Packaging Conference</i> , San Diego, CA, September 24-27, 1995, pp. 577-587.
	AO	13	Knickerbocker, J.U. and Cole, M.S., "Ceramic BGA: A Packaging Alternative", <i>Advanced Packaging</i> , IHS Publishing Group, January/February 1995, Vol. 4, No. 1, pp. 20, 22 and 25.
	AP	13	Kromann, G., <i>et al.</i> , "A Hi-Density C4/CBGA Interconnect Technology for a CMOS Microprocessor", <i>National Electronic Packaging and Production Conference West '95</i> , IEEE, February 26-March 2, 1995, Anaheim, California, pp. 1523-1529.
<i>V</i>	AQ	13	Kunkle, R., "Discrete Wiring for Array Packages", <i>Ball Grid Array National Symposium</i> , Dallas, Texas; March 29-30, 1995, 9 pages.
<i>AL</i>	AR	13	Lall, B. <i>et al.</i> , "Methodology for Thermal Evaluation of Multichip Modules", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A</i> , IEEE, December 1995, Vol. 18, No. 4, pp. 758-764.

EXAMINER

DATE CONSIDERED

12/11/04

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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
<i>AFZ</i>	AA14	6,541,832 B2	04/2003	Coyle			
	AB14	6,545,351 B1	04/2003	Jamieson <i>et al.</i>			
	AC14	6,552,266 B2	04/2003	Carden <i>et al.</i>			
	AD14	6,552,428 B1	04/2003	Huang <i>et al.</i>			
	AE14	6,552,430 B1	04/2003	Perez <i>et al.</i>			
	AF14	6,563,712 B2	05/2003	Akram <i>et al.</i>			
	AG14	6,583,516 B2	06/2003	Hashimoto			
	AH14	6,617,193 B1	09/2003	Toshio <i>et al.</i>			
	AI14	6,664,617 B2	12/2003	Siu			

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ14						Yes No
	AK14						Yes No
	AL14						Yes No
	AM14						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	14	Lasance, C. <i>et al.</i> , "Thermal Characterization of Electronic Devices with Boundary Condition Independent Compact Models", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology Part A</i> , IEEE Components, Packaging, and Manufacturing Technology Society, December 1995, Vol. 18, No. 4, pp. 723-731.
	AO	14	Lau, J. <i>et al.</i> , "No Clean Mass Reflow of Large Plastic Ball Grid Array Packages", <i>Circuit World</i> , Wela Publications Ltd., Vol. 20, No. 3, March 1994, pp.15-22.
	AP	14	Lau, J., <i>Ball Grid Array Technology</i> , McGraw-Hill Inc., 1995, entire book submitted.
<i>V</i>	AQ	14	"Literature Review", Special Supplement to <i>Electronic Packaging & Production</i> , February 1995; Cahners Publication, 10 pages.
<i>MZ</i>	AR	14	LSI LOGIC Package Selector Guide, Second Edition, LSI Logic Corporation, 1994-1995, entire document submitted.

EXAMINER

DATE CONSIDERED

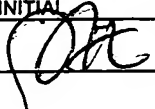
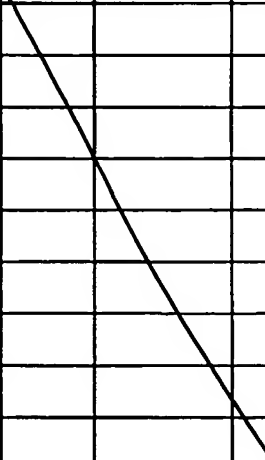
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EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA15	2002/0079572 A1	06/2002	Khan <i>et al.</i>			
	AB15	2002/0185720 A1	12/2002	Khan <i>et al.</i>			
	AC15	2002/0185722 A1	12/2002	Zhao <i>et al.</i>			
	AD15	2002/0185734 A1	12/2002	Zhao <i>et al.</i>			
	AE15	2002/0185750 A1	12/2002	Khan <i>et al.</i>			
	AF15	2002/0190361 A1	12/2002	Zhao <i>et al.</i>			
	AG15	2002/0190362 A1	12/2002	Khan <i>et al.</i>			
	AH15	2003/0057550 A1	03/2003	Zhao <i>et al.</i>			
	AI15	2003/0146503 A1	08/2003	Khan <i>et al.</i>			

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FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ15						Yes No
	AK15						Yes No
	AL15						Yes No
	AM15						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	15	"LTCC MCMs Lead to Ceramic BGAs," <i>Advanced Packaging</i> , IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 14-15.
	AO	15	Mak, Dr. W.C. <i>et al.</i> , "Increased SOIC Power Dissipation Capability Through Board Design and Finite Element Modeling", <i>Journal of Surface Mount Technology</i> , Surface Mount International, October 1994, pp. 33-41.
	AP	15	Marrs, R. <i>et al.</i> , "Recent Technology Breakthroughs Achieved with the New SuperBGA® Package", <i>1995 International Electronics Packaging Conference</i> , San Diego, California, September 24-27, 1995, pp. 565-576.
	AQ	15	Marrs, R.C. and Olachea, G., "BGAs For MCMs: Changing Markets and Product Functionality", <i>Advanced Packaging</i> , IHS Publishing Group, September/October 1994, Vol. 3, No. 5, pp. 48, 50, and 52.
	AR	15	Matthew, L.C. <i>et al.</i> , "Area Array Packaging: KGD in a Chip-Sized Package", <i>Advanced Packaging</i> , IHS Publishing Group, July/August 1994, pp. 91-94.

EXAMINER

DATE CONSIDERED

12/1/04

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA16	2003/0146506 A1	08/2003	Khan <i>et al.</i>			
	AB16	2003/0146509 A1	08/2003	Zhao <i>et al.</i>			
	AC16	2003/0146511 A1	08/2003	Zhao <i>et al.</i>			
	AD16	2003/0179549 A1	09/2003	Zhong <i>et al.</i>			
	AE16	2003/0179556 A1	09/2003	Zhao <i>et al.</i>			
	AF16	10/284,340	10/31/2002	Zhao <i>et al.</i>			
	AG16						
	AH16						
	AI16						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ16						Yes No
	AK16						Yes No
	AL16						Yes No
	AM16						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	16	Mawer, A. <i>et al.</i> , "Plastic BGA Solder Joint Reliability Considerations", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 239-251.
	AO	16	Mazzullo, T. and Schaertl, L., "How IC Packages Affect PCB Design", <i>Surface Mount Technology Magazine</i> , February 1995, Vol. 9, No. 2, pp. 114-116.
	AP	16	Mearig, J., "An Overview of Manufacturing BGA Technology", <i>National Electronic Packaging and Production Conference West '95</i> , February 26-March 2, 1995, Anaheim, California, pp. 295-299.
	AQ	16	Mertol, A., "Application of the Taguchi Method on the Robust Design of Molded 225 Plastic Ball Grid Array Packages", <i>IEEE Transactions on Components, Packaging, and Manufacturing Technology Part B: Advanced Packaging</i> , IEEE, November 1995, Vol. 18, No. 4, pp. 734-743.
	AR	16	Mescher, P. and Phelan, G., "A Practical Comparison of Surface Mount Assembly for Ball Grid Array Components", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 164-168.

EXAMINER

DATE CONSIDERED

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U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA17						
	AB17						
	AC17						
	AD17						
	AE17						
	AF17						
	AG17						
	AH17						
	AI17						

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ17						Yes No
	AK17						Yes No
	AL17						Yes No
	AM17						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	17	Mulgaonker, S. <i>et al.</i> , "An Assessment of the Thermal Performance of the PBGA Family", <i>Eleventh Annual IEEE Semiconductor Thermal Measurement and Management Symposium</i> , IEEE, San Jose, CA, February 7-9, 1995, pp. 17-27.
	AO	17	"New PBGA Pushes Technology to Outer Limits", <i>Advanced Packaging</i> , HIS Publishing Group, January/February 1995, page 11.
	AP	17	Olachea, G., "Managing Heat: A Focus on Power IC Packaging", <i>Electronic Packaging & Production (Special Supplement)</i> , Cahners Publishing Company, November 1994, pp. 26-28.
	AQ	17	"Pad Array Improves Density", <i>Electronic Packaging & Production</i> , Cahners Publishing Company, May 1992, pp. 25-26.
	AR	17	Partridge, J. and Viswanadham, P., "Organic Carrier Requirements for Flip Chip Assemblies", <i>Journal of Surface Mount Technology</i> , Surface Mount Technology Association, July 1994, pp. 15-20.

EXAMINER

DATE CONSIDERED

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

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INFORMATION DISCLOSURE STATEMENT

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28257

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
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FOREIGN PATENT DOCUMENTS

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	AJ18						Yes No
	AK18						Yes No
	AL18						Yes No
	AM18						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

AL	AN	18	Ramirez, C. and Fauser, S., "Fatigue Life Comparison of The Perimeter and Full Plastic Ball Grid Array", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 258-266.
	AO	18	Rogren, P., "MCM-L Built on Ball Grid Array Formats", <i>National Electronic Packaging and Production Conference West '94</i> , February 27 - March 4, 1994, Anaheim, California, pp. 1277-1282.
	AP	18	Rooks, S., "X-Ray Inspection of Flip Chip Attach Using Digital Tomosynthesis", <i>Surface Mount International Proceedings of The Technical Program</i> , August 28-September 1, 1994, San Jose, California, pp. 195-202.
	AQ	18	Rukavina, J., "Attachment Methodologies: Ball Grid Array Technology", <i>Ball Grid Array National Symposium</i> , Dallas, Texas, March 29-30, 1995, 36 pages.
AL	AR	18	Sack, T., "Inspection Technology", <i>Ball Grid Array National Symposium</i> , Dallas, Texas, March 29-30, 1995, pages 1-41.

EXAMINER

DATE CONSIDERED

12/11/04

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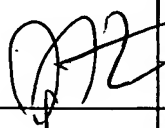


U.S. PATENT DOCUMENTS

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	AJ19						Yes No
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	AL19						Yes No
	AM19						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	19	Sakaguchi, H., "BGA Mounting Technology," pgs. 1-4, date and source unknown.
	AO	19	Schmolze, C. and Fraser, A., "SPICE Modeling Helps Enhance BGA Performance", <i>Electronic Packaging & Production</i> , January 1995, pp. 50-52.
	AP	19	Schueller, R.D. <i>et al.</i> , "Performance and Reliability of a Cavity Down Tape BGA Package," <i>IEEE Electronic Packaging Technology Conference</i> , 1997, pages 151-162.
	AQ	19	<i>Semiconductor Group Package Outlines Reference Guide</i> , Texas Instruments, 1995, entire document submitted.
	AR	19	Shimizu, J., "Plastic Ball Grid Array Coplanarity", <i>Surface Mount International Conference</i> , San Jose, California, August 31-September 2, 1993, pp. 86-91.

EXAMINER

DATE CONSIDERED

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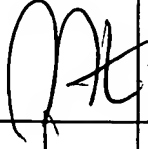
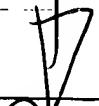

U.S. PATENT DOCUMENTS

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	20	Sigliano, R., "Using BGA Packages: An Appealing Technology in a QFP and Fine-Pitch Market", <i>Advanced Packaging</i> , IHS Publishing Group, March/April 1994, pp. 36-39.
	AO	20	Sirois, L., "Dispensing for BGA: Automated Liquid Dispensing in a High-Density Environment", <i>Advanced Packaging</i> , IHS Publishing Group, May/June 1995, pp. 38 and 41.
	AP	20	Solberg, V., "Interconnection Structure Preparation: Impact of Material Handling and PCB Surface Finish on SMT Assembly Process Yield", <i>Ball Grid Array National Symposium</i> , Dallas Texas, March 29-30, 1995, 9 pages.
	AQ	20	"Survival of the Fittest", <i>Advanced Packaging</i> , IHS Publishing Group, March/April 1995, page unknown.
	AR	20	Thompson, T., "Reliability Assessment of a Thin (Flex) BGA Using a Polyimide Tape Substrate", <i>International Electronics Manufacturing Technology Symposium</i> , IEEE, 1999, pp. 207-213.

EXAMINER

DATE CONSIDERED

12/11/04

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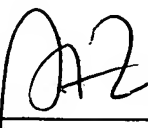




U.S. PATENT DOCUMENTS

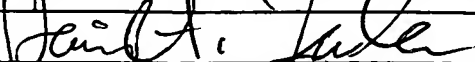
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	AJ21						Yes No
	AK21						Yes No
	AL21						Yes No
	AM21						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>21</u>	Tuck, J., "BGA Technology Branches Out", <i>Circuits Assembly</i> , February 1995, Vol. 6, No. 2, pp. 24, 26, and 28.
	AO	<u>21</u>	"Tutorial and Short Courses", <i>45th Electronic Components & Technology Conference</i> , May 21-24, 1995, Las Vegas, Nevada, IEEE, 4 pages.
	AP	<u>21</u>	Vardaman, E. J. and Crowley, R.T., "Worldwide Trends In Ball Grid Array Developments", <i>National Electronic Packaging and Production Conference West '96</i> , Reed Exhibition Companies, Anaheim, CA, February 25-29, 1996, pp. 699-701.
	AQ	<u>21</u>	Walshak, D. and Hashemi, H., "BGA Technology: Current and Future Direction for Plastic, Ceramic and Tape BGAs", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 157-163.
	AR	<u>21</u>	Walshak, D. and Hashemi, H., "Thermal Modeling of a Multichip BGA Package", <i>National Electronic Packaging and Production Conference West '94</i> , Reed Exhibition Companies, Anaheim, California, February 27-March 4, 1994, pp. 1266-1276.

EXAMINER 	DATE CONSIDERED <u>12/11/04</u>
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December 9, 2003ART UNIT
28264

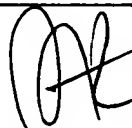



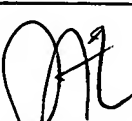
U.S. PATENT DOCUMENTS

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FOREIGN PATENT DOCUMENTS

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	AJ22						Yes No
	AK22						Yes No
	AL22						Yes No
	AM22						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	22	Xie, H. <i>et al.</i> , "Thermal Solutions to Pentium Processors in TCP in Notebooks and Sub-Notebooks", 45th Electronic Components & Technology Conference, IEEE, Las Vegas, NV, May 21-24, 1995, pp. 201-210.
	AO	22	Yip, W.Y., "Package Characterization of a 313 Pin BGA", National Electronic Packaging and Production Conference West '95, Reed Exhibition Companies, February 26-March 2, 1995, Anaheim, California, pp. 1530-1541.
	AP	22	Zamborsky, E., "BGAs in the Assembly Process", Circuits Assembly, February 1995, Vol. 6, No. 2, pp. 60, 62-64.
	AQ	22	Zhao, Z., Ph.D., "IC Package Thermal Issues and Thermal Design," ASAT, Inc., January 14, 2000, 98 pages, presented at 2 nd International Icepak User's Group Meeting, Palo Alto, CA, on February 7, 2000.
	AR	22	Zhao, Z., Ph.D., "Thermal Design and Modeling of Packages," IEEE Short Courses, Broadcom Corporation, October 25, 2000, 95 pages.

EXAMINER

DATE CONSIDERED

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28289

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
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FOREIGN PATENT DOCUMENTS

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	AJ23						Yes No
	AK23						Yes No
	AL23						Yes No
	AM23						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	23	Zimmerman, M., "High Performance BGA Molded Packages for MCM Application", <i>Surface Mount International Conference Proceedings</i> , Surface Mount International, August 28-September 1, 1994, San Jose, California, pp. 175-180.
	AO	23	Zweig, G., "BGAs: Inspect the Process, Not the Product", <i>Electronic Packaging & Production (Special Supplement)</i> , Cahners Publishing Company, August 1994 (Supplement), p. 41.
	AP	23	Freyman, B. and Petrucci, M., "High-Pincount PBGAs: Implementation Into Volume Manufacturing," <i>Advanced Packaging</i> , An IHS Group Publication, May/June 1995, pp. 44-46.
	AQ	23	English-language Abstract of FR 2803098, published June 29, 2001, 1 page, printed from http://v3.espacenet.com .
	AR	23	English-language Summary of Decision of Rejection from Taiwanese Application No. 91108573, 5 pages.

EXAMINER

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28297

U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA24						
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FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ24						Yes
							No
	AK24						Yes
							No
	AL24						Yes
							No
	AM24						Yes
							No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN	<u>24</u>	Zhao <i>et al.</i> , U.S. Patent Appl. No. 10/284,340, filed October 31, 2002, entitled "Ball Grid Array Package With Patterned Stiffener Layer," 137 pages.
	AO	<u>24</u>	
	AP	<u>24</u>	
	AQ	<u>24</u>	
	AR	<u>24</u>	

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